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IS 15928 (2012): Sodium Hydroxide, Food Grade – Specification [FAD 8: Food Additives]

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Indian Standard

SODIUM HYDROXIDE, FOOD GRADE — SPECIFICATION

ICS 67.220.20

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

September 2012 **Price Group 1**

Food Additives Sectional Committee, FAD 8

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Food Additives Sectional Committee had been approved by the Food and Agriculture Division Council.

Sodium hydroxide is used as diluent or filler material in synthetic food colour preparations. It is produced (alongwith chlorine and hydrogen) *via* the chloralkali process. To produce sodium hydroxide it is necessary to prevent reaction of sodium hydroxide with the chlorine. This is typically done in one of three ways, namely, mercury cell process, diaphragm cell process and membrane cell process, of which the membrane cell process is economically the most viable.

To ensure the quality of the product, it is necessary to have quality control specifications. This standard, which is based on Joint FAO/WHO Expert Committee on Food Additives (JECFA) standard for sodium hydroxide, has been formulated to provide the necessary guidelines to manufacturers and the consumers for maintaining quality control.

In the formulation of this standard, due consideration has been given to the *Food Safety and Standards Act*, 2006 and the Rules framed thereunder. Due consideration has also been given to the *Legal Metrology (Packaged Commodities) Rules*, 2011. However, this standard is subject to restrictions imposed under these Rules, wherever applicable.

Description

Common name — Caustic soda
Synonym — lye, sodium hydrate
C.A.S. number — 1310-73-2
Chemical names — Sodium hydroxide
Chemical formula — NaOH
Molecular weight — 40.00
Solubility — Very soluble in water; freely soluble in ethanol

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SODIUM HYDROXIDE, FOOD GRADE — SPECIFICATION

1 SCOPE

This standard prescribes requirements, methods of sampling and test for sodium hydroxide, food grade.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

IS No.	*Title*
252 : 1991	Caustic soda, pure and technical — Specification (*third revision*)
1070 : 1992	Reagent grade water (*third revision*)
1699 : 1995	Methods of sampling and test for food colours (*second revision*)
2491 : 1998	Food hygiene — General principles — Code of practice (*second revision*)

3 REQUIREMENTS

3.1 Description

Sodium hydroxide is available as white or nearly white pellets, flakes, sticks, fused masses and other forms.

3.2 Test for Alkali

A one (1) in 100 solution of the sample is strongly alkaline.

3.3 Test for Sodium

Sodium compounds, after conversion to chloride or nitrate, yield with cobalt-uranyl acetate TS a golden-yellow precipitate, which forms after several minutes of agitation. Sodium compounds impart an intense yellow colour to a non-luminous flame.

3.4 Test for Water Insoluble Substances

One g of the sample dissolves completely in 20 ml of water and gives a clear and colourless solution.

3.5 The material shall also conform to the requirements given in Table 1.

3.6 The material shall be processed, packed, stored and distributed under hygienic conditions in licensed premises (*see* IS 2491).

4 PACKING, STORAGE AND MARKING

4.1 Packing

The material shall be securely packed in well-filled containers with minimum access to air. The containers shall be such as to preclude contamination of the contents with metals or other impurities.

4.2 Storage

The material shall be stored in a cool and dry place so as to avoid excessive exposure to heat.

4.3 Marking

Each container shall be legibly and indelibly marked with the following information:

a) Name of the material including the words 'Food Grade';
b) Name and address of the manufacturer;
c) Batch or Code number;
d) Net quantity when packed;
e) Instruction for storage;
f) Best before date (month and year to be given by the manufacturer); and

Table 1 Requirements for Sodium Hydroxide

(*Clause* 3.5)

Sl No.	Characteristic	Requirement	Methods of Test, Ref to	
			Annex of this Standard	Clause of Other Standards
(1)	(2)	(3)	(4)	(5)
i)	Purity as NaOH, percent by mass, *Min*	95	A	—
ii)	Carbonate, percent by mass as Na_2CO_3, *Max*	3	—	A-3 of IS 252
iii)	Lead (as Pb), mg/kg, *Max*	2	—	15 of IS 1699
iv)	Mercury (as Hg), mg/kg, *Max*	1.5	—	15 of IS 1699

g) Any other requirements as given under the *Legal Metrology (Packaged Commodities) Rules*, 2011 *and Food Safety and Standards (Packaging and Labelling) Regulation*, 2011.

4.3.1 *BIS Certification Marking*

The product may also be marked with the Standard Mark.

4.3.1.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

5 SAMPLING

Representatives samples of the material shall be drawn according to the method prescribed in **4** of IS 1699.

6 QUALITY OF REAGENTS

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities, which affect the results of test or analysis.

ANNEX A

[*Table* 1, *Sl No.* (i)]

TEST FOR SODIUM HYDROXIDE

A-1 PROCEDURE

Dissolve about 1.5 g of the sample, accurately weighed, in 40 ml of recently boiled and cooled water, cool to 15ºC, add phenolphthalein TS and titrate with 1 N sulphuric acid. At the discharge of the pink colour, record the volume of acid required, then add methyl orange TS and continue to titrate to a persistent pink colour. Record the total volume of acid required for the titration. Each ml of 1 N sulphuric acid is equivalent to 40.00 mg of total alkali, calculated as NaOH.

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Amendments Issued Since Publication

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